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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT

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1791

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/690,498	Applicant(s) WINTER ET AL.	
	Examiner Jeff Wollschlager	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-6,8-12,15,16 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-6,8-12,15,16 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/10/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Applicant's amendment to the claims filed November 21, 2007 has been entered. Claims 5, 6, 8-12 and 30 are currently amended. Claims 4-6, 8-12, 15, 16 and 30 are pending and under examination.

Information Disclosure Statement

References A 4 and A9 in the information disclosure statement filed May 10, 2004 fail to comply with 37 CFR 1.98(a)(3) because they do not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. References A 4 and A9 have not been considered.

The examiner notes that the record does not appear to contain the English translation of the pertinent portions of the ISR referenced in the last paragraph on page 5 of the REMARKS filed November 21, 2007. Reference A6 has been considered in view of the English translation of the German office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 4-6, 8-12, 15, 16 and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one

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skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding claim 30, the claim recites the melting pressure is approximately 700-1500 bar. There does not appear to be support for this limitation in the original disclosure. The original disclosure provides support for a pressure that "does not exceed" 700-1500 bar. In other words, the original disclosure discloses pressures that are less than 1500 bar. This is a broader recitation than that instantly presented which limits the pressure to a range of 700-1500 bar. Further regarding claim 30, the amendment now recites that the "mixture" has a melting point and a crosslinking temperature. This was changed from the "peroxide crosslinkable polymer". The examiner submits that the specification appears to discuss the melting point and crosslinking temperature relative to the polymer itself and does not appear to provide support for the crosslinking temperature and melting point relative to the "mixture". The examiner further submits that while in most instances these temperatures would likely be substantially similar and that the discussion in the specification appears to make it clear that the temperature of crosslinking is generally understood in the context of the peroxide decomposition temperature. However, it appears to follow from the amendment that applicant is suggesting there may be a substantial difference between the crosslinking temperature of the "polymer" and the "mixture". Further clarification and/or amendment is required.

Additionally, regarding claim 30, the scope of the term crosslinkable polymer has been broadened by the deletion of the term "peroxide" (i.e. peroxide crosslinkable polymer). There does not appear to be support in the original disclosure to employ polymers other than peroxide crosslinkable polymers.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4, 5, 8-12, 16 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ootsuji et al. (US 3,868,436) in view of Fuwa et al. (US 3,928,525) and in view of Gould (US 3,331,100) and/or Schmid et al. (US 5,804,116).

Regarding claims 8-12, 16 and 30, Ootsuji et al. teach a method of extruding crosslinkable polymeric materials over a conductor wherein a polymer, a peroxide/crosslinking agent and various auxiliaries/stabilizers are fed to an extruder (col. 11, lines 36-col. 12, lines 4). The mixture is heated in the extruder, but is not crosslinked (Abstract; col. 3, lines 46-56). Subsequent to exiting the extruder, the mixture enters a long die land (Figure 1; (4)) wherein the mixture is crosslinked to the desired extent (col. 4, lines 2-5; col. 5, lines 10-17; col. 9, lines 22-32). Ootsuji et al. teach that the temperature is optimized within the die land (col. 9, lines 43-67) and exemplify a temperature of 250 °C in the die land (Example 1). The examiner notes that the cited peroxides in Ootsuji et al. decompose at temperatures of 171 °C – 186 °C (col. 9, lines

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56-62) and that the decomposition of the peroxide is what initiates the crosslinking of the polyethylene. Further, the examiner notes that the melting point of polyethylene is approximately in the range of 125 °C - 140 °C. Additionally, Ootsuji et al. teach and suggest that the pressure of the extrusion can be optimized and lessened relative to conventional methods by utilizing a lubricant in the die land portion (col. 10, lines 1-15; col. 10, lines 32-58). Upon completing the extrusion process, Ootsuji et al. teach that the crosslinking may be as high as 98% (col. 10, lines 48-52). The crosslinked material is finally cooled (Figure 1 (7)). Ootsuji et al. do not teach forming a tubular article (i.e. the extruded material without a conductor) or that the extruder is heated externally and cooled internally.

However, Fuwa et al. teach a highly analogous method of extruding crosslinkable polymeric materials wherein a coated conductor or a tubular article is produced to form a desired product and suggest that similar extrusion methods are suitable for producing both a coated conductor or a tubular article with a long land die wherein temperatures are chosen to form the article below the crosslinking temperature in the extruder and to crosslink the material in the long land die portion (col. 1, lines 9-25; col. 8, lines 32-44; col. 10, lines 26-42; Example 1; claims 1, 10, 12 and 13). Additionally, Schmid et al. teach a method of extruding tubular materials (col. 1, lines 58-66; col. 2, lines 45-56; Abstract; Figure 1) over a mandrel where the extruder temperature is cooled with a hollow screw (Figure 1 and 2; col. 10, line 17- col. 11, line 32) and Gould teaches it is known in the art to electrically heat the barrel of the extruder while internally heating/cooling the screw in order to obtain a uniform temperature of the plastic melt and rapid heat plastification (col. 1, lines 9-33).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed an extruder having internal cooling means, as suggested by Schmid and/or Gould in the method disclosed by Ootsuji et al. for the purpose,

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as suggested by Gould, of obtaining a uniform temperature of the melt in the extruder. Further, it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have formed a tubular article, as suggested by Fuwa et al., with the method of Ootsuji et al. since Fuwa et al. suggest that such extrusion methods are known in the art to be suitable for forming both coated conductors and tubular articles.

As to claim 4, Schmid disclose double screw extruders (col. 2, lines 45-68; col. 8, lines 57-58) as being suitable for processing large amounts of material. Such a double screw configuration is routine in the extrusion art.

As to claim 5, Ootsuji et al. teach heating the die land electrically (col. 9, lines 42-54) and Fuwa et al. disclose the die land is heated with a band heater (Figure 1; (6)).

Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ootsuji et al. (US 3,868,436) in view of Fuwa et al. (US 3,928,525) and in view of Gould (US 3,331,100) and/or Schmid et al. (US 5,804,116), as applied to claims 4, 5, 8-12, 16 and 30 above, in view of Munsell (US 3,095,608).

As to claims 6 and 15, the combination teaches the method set forth above. Ootsuji et al. do not teach inductively heating from the interior of the die or maintaining the temperature at a temperature above the crosslinking temperature after discharge from the extrusion die.

However, Munsell teaches and suggests inducting heat from the interior of the die (Figure (42); col. 2, lines 1-20) and maintaining the temperature above the crosslinking temperature for a period after leaving the die to ensure adequate crosslinking prior to being cooled (col. 4, lines 1-9; col. 5, lines 8-13).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Ootsuji et al. and to have

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inductively heated from the interior of the die and to have maintained the temperature at a temperature above the crosslinking temperature after discharge from the extrusion die as suggested by Munsell since Munsell suggests that such methods are an equivalent alternative means of achieving suitable crosslinking of extruded articles.

Response to Arguments

Applicant's arguments filed November 21, 2007 have been considered, but are moot in view of the new grounds of rejection necessitated by the amendment.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is (571)272-8937. The examiner can normally be reached on Monday - Thursday 6:45 - 4:15, alternating Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. W./

Examiner, Art Unit 1791

February 12, 2008

/Christina Johnson/

Supervisory Patent Examiner, Art Unit 1791